

FIGURE 1A

HMEAA94

-50 -30 -10

GGAGGTTGGTGGCAGCTCCCTCGCTGCCCTCACTGCCGGCGTCCAACTCCAGGCACC
 10 30 50

ATGTTCCCCGGGGCCCCCAGCCACAGCCTCCTCCGGCTCCCTGCTGAGTTGCTG
 M F P A G P P S H S L L R L P L L O L L
 70 90 110

CTACTGGTGGTGCAGGCCGTGGGAGGGGGCTGGGCCGCCAGCCCGGCCGGGGCCCC
 L L V V O A V G R G L G R A S P A G G P
 130 150 170

CTGGAAGATGTGGTCATCGAGAGGTACCAACATCCCAGGGCTGTCCCGGAAAGTGCAG
 L E D V V I E R Y H I P R A C P R E V Q
 190 210 230

ATGGGGGATTTGTGCGCTACCACTACAACGGCACTTTGAAGATGGCAAGAAGTTGAT
 M G D F V R Y H Y N G T F E D G K K F D
 250 270 290

TCAAGCTATGATCGAACACCTGGTGGCATCGTGGTGGTGTGGGGCCCTCATCACT
 S S Y D R N T L V A I V V G V G R L I T
 310 330 350

GGCATGGACCGAGGCCTCATGGCATGTGTCAACGAGCGGCCAGCCTCATGGCT
 G M D R G L M G M C V N E R R R L I V P
 370 390 410

CCCCACCTGGCTATGGGAGCATGGCCTGGGGGCTCATTCACCGGATGCCACCCCTC
 P H L G Y G S I G L A G L I P P D A T L
 430 450 470

TACTTCGATGTGGTCTGCTGGATGTGTGAAACAAGGAAGACACCGTGCAGGTGAGCACA
 Y F D V V L L D V W N K E D T V Q V S T
 490 510 530

TTGCTGCCCGCCCCACTGCCCGCATGGTCCAGGACGGCGACTTGTCCGCTACCAC
 L L R P P H C P R M V Q D G D F V R Y H
 550 570 590

TACAATGGCACCCCTGCTGGACGGCACCTCTCGACACAGCTACAGTAAGGGCGGACT
 Y N G T L L D G T S F D T S Y S K G G T
 610 630 650

TATGACACCTACGTGGCTCTGGATGTGATCAAGGGCATGGACCAGGGCTGGC
 Y D T Y V G S G W L I K G M D Q G L L G
 670 690 710

ATGTGTCTGGACAGAGAAGGAAGATTATCATCCCTCCATTCCCTGGCCTATGGCGAGAAA
 M C P G Q R R K I I I P P F L A Y G E K
 730 750 770

GGCTATGGTGAGGGTGGCAAGGACACAAGGGAAATTCCGCAGAAGAGGGAAAAACCAAG
 G Y G E G G Q G H K G K F R R R G K N Q

FIGURE 1B

790	810	830
GCCTCCACATACAGTTGCTCAGGTTGTATACTGCACGGGGCATCCAACCAAGGACTCAA		
A S T Y S C S G C I L H E G I Q P R T Q		
850	870	890
GGTGGGATGAAATCTACCCCTGGTGCTACTAAGAAGGGGTGCTTGGCCGGCGTGGTGG		
G G M K S T L G A T K K G C F G R A W W		
910	930	950
CTCACGCTTGTAAATCCCAGCACTTGGGAAGCCAAGGCAGGAGGATCACGAGGTCCAGGA		
L T L V I P A L W E A K A G G S R G P G		
970	990	1010
GATCGAGACCACGGTGAAACCCCGTCTCTACTAAAAATACAAAAAAATTAGCCGGGCCTG		
D R D H G E T P S L L K I Q K N *		
1030	1050	1070
GTGGGGCGCCTGTAGTCCCAGCTACTCGGAGAGGCTGAGGCAGGAAATGACGTGAACC		
1090	1110	1130
CGGGAGGCGGAGCTTGCACTGAGCCGAGATCTGCCACTGCACTCCAGCCTGGGTGACAG		
1150	1170	
AGCGAGACTCTGTCTCAAAAAAAAAAAAAAA		

FIGURE 2A

HL1AP03

10	30	50
CTTCGATGTGGTTCTGCTGGATGTGGAAACAAGGAAGACACCGTGCAGGTGAGCACATT		
F D V V L L D V W N K E D T V Q V S T L		
70	90	110
GCTGCGCCCGCCCCACTGCCCCCGATGGTCCAGGACGGCGACTTGTCCGCTACCACTA		
L R P P H C P R M V Q D G D F V R Y H Y		
130	150	170
CAATGGCACCCCTGCTGGACGGCACCTCCTCGACACCAAGCTACAGTAAGGGCGGCACTTA		
N G T L L D G T S F D T S Y S K G G T Y		
190	210	230
TGACACCTACGTCGGCTCTGGTTGGCTGATCAAGGGCATGGACCAGGGCTGCTGGGCAT		
D T Y V G S G W L I K G M D Q G L L G M		
250	270	290
GTGTCCCTGGAGAGAGAAGGAAGATTATCATCCCTCCATTCCCTGGCCTATGGCGAGAAAGG		
C P G E R R K I I I P P F L A Y G E K G		
310	330	350
CTATGGGACAGTGATCCCCCCCACAGGGCTCGCTGGCTTTACGTCCTCCTGATTGACGT		
Y G T V I P P Q A S L V F H V L L I D V		
370	390	410
GCACAAACCCGAAGGACGCTGTCCAGCTAGAGAGACGCTGGAGCTCCCCCCCAGCTGTGTCCG		
H N P K D A V Q L E T L E L P P G C V R		
430	450	470
CAGAGCCGCGCCGGGACTTCATGCGCTACCACTACAATGGCTCCTGATGGACGGCAC		
R A G A G D F M R Y H Y N G S L M D G T		
490	510	530
CCTCTTCGATTCAGCTACTCCCACAACCACACCTACAATACCTATATCGGGCAGGGTTA		
L F D S S Y S H N H T Y N T Y I G Q G Y		
550	570	590
CATCATCCCCGGGATGGACCAGGGCTGCAGGGTGCCTGCATGGGGAACGCCGGAGAAT		
I I P G M D Q G L Q G A C M G E R R R I		
610	630	650
TACCATCCCCCGCACCTCGCCTATGGGAGAAATGGAACCTGGAGACAAGATCCCTGGCTC		
T I P P H L A Y G E N G T G D K I P G S		
670	690	710
TGCCGTGCTAATCTTCAACGTCCATGTCATTGACTTCCACAACCTGCGGATGTGGTGGAA		
A V L I F N V H V I D F H N P A D V V E		
730	750	770
AATCAGGACACTGTCCCCGCCATCTGAGACCTGCAATGAGACCACCAAGCTGGGACTT		
I R T L S R P S E T C N E T T K L G D F		

FIGURE 2B

790 810 830

TGTTCGATACCATTACAACGTGTTCTTGCTGGACGGCACCCAGCTGTCACCTCGCATGA
 V R Y H Y N C S L L D G T Q L F T S H D
 850 870 890

CTACGGGGCCCCCAGGAGGCGACTCTGGGGCAACAAGGTGATCGAAGGCTGGACAC
 Y G A P Q E A T L G A N K V I E G L D T
 910 930 950

GGGCCTGCAGGGCATGTGTGAGAGAGGGCAGCTCATCGTGCACCTGGC
 G L Q G M C V G E R R Q L I V P P H L A
 970 990 1010

CCACGGGAGAGTGGAGCCGGGAGTCCAGGCAGTGTGCTGCTGTTGAGGTGGA
 H G E S G A R G V P G S A V L L F E V E
 1030 1050 1070

GCTGGTGTCCGGGAGGATGGGCTGCCACAGGCTACCTGTTGTTGAGGACCC
 L V S R E D G L P T G Y L F V W H K D P
 1090 1110 1130

TCCTGCCAACCTGTTGAAGACATAGACCTCAACAAGGATGGCAGGTCCCTCCGGAGGA
 P A N L F E D I D L N K D G E V P P E E
 1150 1170 1190

GTTCTCCACCTCATCAAGGCTCAAGTGAGTGAGGGCAAAGGACGCCATGCCCTGGCA
 F S T F I K A Q V S E G K G R L M P G Q
 1210 1230 1250

GGACCCCTGAGAAAACCATAAGGAGACATGTTCCAGAACCAAGGACCGCAACCAGGACGGCAA
 D P E K T I G D M F Q N Q D R N Q D G K
 1270 1290 1310

GATCACAGTCGACGAGCTCAAGCTGAAGTCAGATGAGGACGAGGAGCAGGGTCCACGAGGA
 I T V D E L K L K S D E D E E R V H E E
 1330 1350 1370

GCTCTGAGGGCAGGGAGCCTGGCCAGGCCTGAGACACAGAGGCCACTGCGAGGGGAC
 L * 1390 1410 1430

AGTGGCGGTGGACTGACCTGCTGACAGTCACCCCTCCCTCTGCTGGGATGAGGTCCAGGA
 1450 1470 1490

GCCAACTAAACAATGGCAGAGGAGACATCTGGTGTCCCACCACCCCTAGATGAAAT
 1510 1530 1550

CCACAGCACAGACCTCTACCGTGTTCATCCCTAAACCACCTCCTAAATGTT
 1570 1590 1610

TGGATTGCAAAGCCAATTGGGGCTGTGGAGCCTGGGTTGGATAGGGCCATGGCTGG
 1630 1650 1670

TCCCCCACCATACCTCCCCCTCCACATCACTGACACAGCTGAGCTTGTATCCATCTCCCC
 1690 1710 1730

AAACCTCTCTTGTACTTGTATCCATCCCCACTCCCAGCCCCATTCCCTATGT

FIGURE 2C

1750 1770 1790
GACAGCTGGCTAGGACCCCTCTGCCTTCCTCCCCAATCCTGACTGGCTCCTAGGGAAGGG
1810 1830 1850
GAAGGCCTGGAGGGCAGCCCTACCTCTCCCATGCCCTTRGCCCTCCCTCCCTGCCCTCC
1870 1890 1910
AGTGGAGGCTGAGCTGACCTGGCTGCTGGAGGCCAGACTGGCTGTAGTTAGCTTTTC
1930 1950 1970
ATCCCTAAAGAAGGCTTCCCTAAGGAACCATAAGAAGAGAGGAAGAAAACAAAGGGCATG
1990 2010 2030
TGTGAGGGAAAGCTGCTTGGGTGGGTAGGGCTATGAAATCTGGATTGGGCTGAGG
2050 2070 2090
GGTGGGAGGGAGGGCAGAGCTCTGCACACTCAAAGGCTAAACTGGTGTCAAGTCCTTTTT
2110 2130
CCTTTGTTCAAATAAAAGATTAAACCAAAAAAAAAAAAAAAA

FIGURE 3A

HSYBM46

GCGTCCGCGGCTGCAGCCCCGGTAGGCCAGGAGACCCGGTCCACGTTGCAAACGCAGC
 CGAACGCCAGGCCACCCGTGCCGCCAGCGCCGCTGCGTCGCCACTCTTCTC

M A F R G W R P P P P P P L L L L L
 GCCGCCCGATGGCGTTCCGGGGCTGGAGGCCCGCCACCGCTGCTCCTGCTGCTG

L W V T G O A A P V A G L G S D A E L Q
 CTCTGGGTGACCGGGCAGGCAGCGCCCGTGGCGGGCTGGCTCCGACGCGGAGCTGCAG

I E R R F V P D E C P R T V R S G D F V
 ATCGAGCGCGCTTCGTGCCGACGAGTGCCCGCACCCTGCGCAGCGCGACTTCGTG

R Y H Y V G T F P D G Q K F D S S Y D R
 CGCTACCACTACGTGGGACGTTCCCCGACGGCAGAAGTTGACTCCAGCTATGACAGA

D S T F N V F V G K G Q L I T G M D Q A
 GACTCCACTTCAATGTGTTGGAAAAGGACAGCTGATCACAGGGATGGACCAGGCT

L V G M C V N E R R F V K I P P K L A Y
 CTTGTTGGGATGTGCGTAAACGAGAGACGTTCTGTAAGATTCCCCAAAGCTTGCCTAC

G N E R V S G V I P P N S V L H F D V L
 GGAAATGAAAGAGTTCTGGTGTGATCCCCCAATTCAAGTGCCTATTGATGTACTT

L M D I W N S E D Q V Q I H T Y F K P P
 CTGATGGATATTGGAATTCTGAAGACCAGGTTCAAGATTCAAGCCCCCG

S C P R T I Q V S D F V R Y H Y N G T F
 AGTTGCCCTCGGACCATCCAGGTGTCTGATTTGTGAGGTACCAACTAACGGACGTT

L D G T L F D S S H N R M K T Y D T Y V
 CTGGACGGAACTCTGTTGATTCGAGTCACAATCGCATGAAAACATATGACACGTATGT

G I G W L I P G M D K G L L G M C V G E
 GGAATTGGCTGGCTGATTCTGGAAATGGATAAAGGGCTGCTGGGATGTGTGGGTGAG

K R I I T I P P F L A Y G E D G D G K D
 AAGCGCATCATCACCATTCCCTCTGGCTATGGAGAGGATGGAGATGGAAAGAC

I P G Q A S L V F D V A L L D L H N P K
 ATTCCCGGTCAAGGCATCTGGTGTGATGTTGCAATTGGACCTCCATAACCCCAAG

D S I S I E N K V V P E N C E R I S Q S
 GACAGCATTCCATTGAGAACAGGTAGTACCTGAAACTGTGAGCGATAAGTCAAAGT

G D F L T Y H Y N G T L L D G T L F D S
 GGGGACTTTCTCACGTATCATTACAATGGCACGCTCTGGATGGCACCCCTTTGATTCC

FIGURE 3B

S Y S R N R T F D T Y I G Q G Y V I P G
 AGCTACTCTCGAACCGCACGTTGACACGTACATTGGCAGGGCTACGTGATTCCCTGGG

 M D E G L L G V C I G E K R X I V V P P
 ATGGATGAAGGTCTACTTGGTGGTGCATTGGAGAAAAGCGAANGATTGTGGTCCCGCCT

 H L G Y G E E G R G N I P G S A V L V F
 CACCTGGGTATGGAGAGGAAGAGGAATATCCCCGGCTGGCTGTGCTGGTGT

 D I H V I D F H N P S D S I S I T S H Y
 GACATCCATGTGATCGACTTCCACAACCCCTCGGACTCCATCAGCATCACCTCCACTAC

 K P P D C S V L S K K G D Y L K Y H Y N
 AAACCCCTGACTGCTCAGTGAGTAAGAAGGGAGATTACCTCAAATATCACTACAAT

 A S L L D G T L L D S T W N L G K T Y N
 GCCTCACTTCTGGATGGACCCCTGCTGGACTCCACGTGGAATTAGGCAAAACTTACAAT

 I V L G S G Q V V L G M D M G L R E M C
 ATTGTTCTGGGATCTGGCAAGTTGTGTTGGGATGGACATGGTCTCAGAGAGATGTGC

 V G E K R T V I I P P H L G Y G E A G V
 GTTGGCGAGAACGGACAGTGATCATCCGCCTCACCTGGCTATGGGAAGCTGGCGTG

 D G E V P G S A V L V F D I E L L E L V
 GATGGAGAAGTGCCCGCAGTGGCTATTAGTGGTACATTGAGCTGGAGCTGGTG

 A G L P E G Y M F I W N G E V S P N L F
 GCTGGCCTTCCTGAGGGTACATGTTCATATGGAATGGTGAGGTGTACCCAACCTCTT

 E E I D K D G N G E V L L E E F S E Y I
 GAAGAAATTGACAAGGATGGCAACGGAGAAGTCCCTGGAAAGAGTTCTCAGAGTACATT

 H A Q V A S G K G K L A P G F D A E L I
 CACGCCAGGTGGCATCTGGCAAAGGAAACTCGCTCCTGGCTTGATGCTGAGCTGATT

 V K N M F T N Q D R N G D G K V T A E E
 GTGAAGAATATGTTACCAACCAGGACCGGAATGGAGATGGGAAGGTACAGCCGAGGAA

 F K L X D Q E A K H D V T L N L A *
 TTTAAACTCARAGACCAGGAAGCCAAACACGATGTAACCTAAACCTGGCATGAACCAGA

 TGGTGCAGGGAGTACGTGACACCAAGCCACCTGTGCGMAAGACGTGCARTTGARGGT
 GCAAGGGGTCTCTCAGAAGTTGCATCCATTAGCCAGTAGTAGGTGGGTACATAGTAC
 CTGGTGTACACATCGGGTGGTTGATATATGGGTGAGAAGTTGGCTGATGCCAGT
 GATAGTAAACAAATCTGTGNCAGAGGCCCTAACATGGATGTGTCCAGTATTGACCC
 ACGCGTCCGNTGCCAACCATGATTGTGAGCCTCTGGAAATTGTTATTAAAGGAA
 TATATAGTGTNCAGACGGAAGTTATAATCATCTTGAGGAACCATAAGAAAAGGTGTCCA
 GGGTATCTATATAAGAGGGTAAATTGTTACTTGCTGGTAAACATTAGAA
 ATATTCTAGAGATGGCAGGAGAGTCAAAGGCTTGCTTGCCCAGCAGAGTTCCAGCA
 GACAGCCATGGATATTCCCAGCAGCCTGTGCAAATTCTGATGATGGCCCCACCCCGCAC
 ACGGCACACGNACATCAWGCTTTCCAGCTCATCACACCCGCCANTNNGGCCTAC
 CATTAATAGNGTATNANTGGAGGNTAAAGAGCCTTGGACAGAAAATGGGCCAGGN
 AAAGGCATNTCAGACCACAAATAGAGAATTGATTGTCATTGCCACANAAGTCATCTG

FIGURE 3C

NTTAGCTTNTCCTTCCCTNANANANATTNANTTTCTGGAGGCAGAGTCTCCCTTT
GTCGCCAGGCTGGAGTCAGTGGTGCATCTCGCTCACTGCAGCAGTCTCGGCTCAC
TGCAGCKTCCGCCTCCCGTATTCAAGCGATTCTCCTGTCTAGCCTCTGAGTAGCTGGG
ASTACAGGTGTGCACCACCGCCCGCTAATTGGTATTAGTAGAGACGGGGTTT
CACTGTGTTGGCCAGGATGGTCTCAATCTGACTTCGTGATCCGCCACCTGGCCTCCC
AAAGTGTGGGATTACAGGGCTGACTCACCATGCCAGCCACTTAGTTTTCTTATTCC
CACCTTCTATCCCATAGAACATCTTTTATCTCCCTGAACCATAWGATGAGATAAA
TAGGGCTGGGGMTGGGCCCGCTGGTCACTCAACAGAGTATTCCCTGGCCGAGATGG
AAGTTTGTCCCATAAGATGAGCTGCTGAGTATCAACAAGGTGACATTCTGCTGCC
ATTGTGTCTGGAGACGGTGGTACCTCTGAAGGCAGAGGCCAGTGGCCAAGACAGCAAT
GACAGTCCACCTGCCGACCTGATTCTGCATCATGGAATAACCACATGGCTACCTTCTAT
CCTCTGTTCCCAAATGGTGGTGGCACTTATCTGAAGTCGTCAATGACTTCCCTTGAAA
CTACTTATTTACTAATTAAACTATTTGTACTGATGTAGCCCTGAGGTAGTTCATGA
AAATGCTGTGCACTCATTCCATGGAATAATGTTGGAAAGCTCATTTCTGATATAAA
ATGTTGAATGATAAAAAAAAAAAAAAAAAAAAAAA

FIGURE 4A

HFKBC47

10	30	50
ACACGTATGGGAAATTGGCTGGCTGATTCCCTGGAATGGATAAAGGGCTGCTGGGATGT		
T Y G E I G W L I P G M D K G L L G M C		
70	90	110
GTGTGGGTGAGAACGGCATCATCACCAATTCCCTCCTTTCTGGCCTATGGAGAGGATGGAG		
V G E K R I I T I P P F L A Y G E D G D		
130	150	170
ATGGGAAAGACATTCCCGTCAGGCATCTCTGGTGTGATGTTGCATTATTGGACCTCC		
G K D I P G Q A S L V F D V A L L D L H		
190	210	230
ATAACCCCCAAGGACAGCATTCCATTGAGAACAAAGGTAGTACCTGAAAAGTGAGCGGA		
N P K D S I S I E N K V V P E N C E R I		
250	270	290
TAAGTCAAAGTGGGACTTCTCAGGTATCATTACAATGGCACGCTCTGGATGGCACCC		
S Q S G D F L R Y H Y N G T L L D G T L		
310	330	350
TCTTGATTCAGCTACTCTCGGAACCGCACGTTGACACGTACATTGGGCAGGGCTACCG		
F D S S Y S R N R T F D T Y I G Q G Y V		
370	390	410
TGATTCCCTGGGATGGATGAAGGTCTACTTGGTGTGATGGAGAAAAGCGAAGGATTG		
I P G M D E G L L G V C I G E K R R I V		
430	450	470
TGGTCCCGCCTCACCTGGGTATGGAGAGGAAGAGGAATATCCCCGGCTCGGCTG		
V P P H L G Y G E E G R G N I P G S A V		
490	510	530
TGCTGGTGTGACATCCATGTGATCGACTTCCACAACCCCTCGGACTCCATCAGCATTCA		
L V F D I H V I D F H N P S D S I S I T		
550	570	590
CCTCCCCACTACAAACCCCTGACTGCTCAGTGCTGAGTAAGAAGGGAGATTACCTCAAAT		
S H Y K P P D C S V L S K K G D Y L K Y		
610	630	650
ATCACTACAATGCCTCACTTCTGGATGGACCCCTGCTGGACTCCACGTGGAATTAGGCA		
H Y N A S L L D G T L L D S T W N L G K		
670	690	710
AAACTTACAAATATTGTTCTGGGATCTGGCAAGTTGTGTTGGGATGGACATGGGTCTCA		
T Y N I V L G S G Q V V L G M D M G L R		
730	750	770
GAGAGATGAGCGTTGGCCAGAACGGACAGTGATCATTCCGCCTCACCTGGGCTATGGGG		
E M V G E K R T V I I P P H L G Y G E		

FIGURE 4B

AAGCTGGCGTGGATGGAGAAGTGC	790	810	830
C C G C G T G G A T G G A G A A G T G C C C G G C A G T G C C G T A T T A G T G T T G A C A T T G A G C T G C			
A G V D G E V P G S A V L V F D I E L L			
850	870	890	
TCGAGCTGGTGGCTGGCCTTCCTGAGGGGTACATGTTCATATGGAATGGTGAGGTGTCAC			
E L V A G L P E G Y M F I W N G E V S P			
910	930	950	
CCAACCTCTTGAAAGAAATCAACAAAGGTGACATTTCCTGCTGCCATTGTCCTGGAA			
N L F E E I N K V T F F C C P F V S W R			
970	990	1010	
GACGGTGGTACCTGAAGGCAGAGGCCAGCTGCCAAGACAGCAATGACAGTCCACCTGAA			
R W Y P E G R G Q L P Q D S N D S P P A			
1030	1050	1070	
CCGACCTGATTCCTGCATCATGAAATAACCACATGGCTACCTTCTATCCTCTGTTCCCAA			
D L I P A S W N N H M A T F Y P L F P N			
1090	1110	1130	
ATGGTGGTGGCACTTATCCTGAAGTCGTCATGGCTACCTTCTATCCTCTGTTCCCAA			
G G G T Y P E V V N D F P L K L L Y F T			
1150	1170	1190	
CTAATTAAACTATTTGTACTGATGTAGCCCTGAGGTAGTCATGAAAAATGCTGTGCA			
N L N Y F V L M *			
1210	1230	1250	
CTCATTCCATGGGAATAAAATGTTGGGAAAGCTGAAAAA			